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IS 4808 (1982): Pyrethrum Emulsifiable Concentrates [FAD 1: Pesticides and Pesticides Residue Analysis]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard
SPECIFICATION FOR
PYRETHRUM EMULSIFIABLE
CONCENTRATES
(*First Revision*)

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR PYRETHRUM EMULSIFIABLE CONCENTRATES (First Revision)

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Indian Standard
SPECIFICATION FOR
PYRETHRUM EMULSIFIABLE
CONCENTRATES
(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 29 January 1982, after the draft finalized by the Pest Control Sectional Committee had been approved by the Agricultural and Food Products Division Council and Chemical Division Council.

0.2 Pyrethrum emulsifiable concentrates, are largely used in control of insect pests of medical, agricultural and veterinary importance. They are prepared by extracting commercial pyrethrum flowers (*chrysanthemum cinerariaefolium* Linn.) with a suitable solvent and mixed with emulsifying agent(s), and contain the ingredients occurring naturally in pyrethrum flowers. The active principle in pyrethrum emulsifiable concentrate is composed of six esters, namely, Pyrethrin I and II, Cinerin I and II, and Jasmolin I and II. They all are insecticidally active but the strength of the concentrate is determined by determining the total esters of mono-carboxylic acid (called Pyrethrin I) and the total esters of dicarboxylic acid (called Pyrethrin II).

0.3 This standard was first published in 1968. Two amendments were subsequently issued. The standard is being revised to incorporate these amendments and also to align to the methods of identity and test in accordance with IS : 1051-1980*.

0.4 Pyrethrum emulsifiable concentrate is generally manufactured to contain 2 percent (m/m) of total pyrethrins.

0.5 In the preparation of this standard, due consideration has been given to the provisions of the Insecticides Act 1968 and the Rules framed there-under. However, this standard is subject to the restrictions imposed under these, wherever applicable.

*Specification for pyrethrum extracts (second revision).

0.6 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and methods of sampling and test for pyrethrum emulsifiable concentrates.

2. REQUIREMENTS

2.1 Constituents — The material shall consist of pyrethrum extracts dissolved in suitable solvent(s) together with emulsifying agents and with or without antioxidant(s).

2.1.1 Pyrethrum extract employed in the manufacture of this material shall conform to IS : 1051-1980†.

2.2 Physical

2.2.1 Description — The material shall be homogeneous liquid. Sediment and/or suspended matter shall be negligible. It shall be free from synthetic pyrethroids.

2.2.2 Identity — The material shall comply with the identity test as described under Appendix A of IS : 1051-1980‡, and shall not contain any synthetic pyrethroid. If any spots in addition to those given by the standard reference sample are detected, it shall be ensured that these additional spots are not due to any synthetic pyrethroid. If the presence of any synthetic pyrethroid is established in TLC testing, total pyrethrin content as described under Appendix B of IS : 1051-1980† should not be determined as the synthetic pyrethroid would analyse wrongly as pyrethrins.

2.2.3 Cold Test — No turbidity or separation of solid and/or oily matter or both shall occur when the material is subjected to the cold test at 10°C as prescribed in **13.1** of IS : 6940-1973‡, or any other lower temperature as agreed to between the purchaser and the supplier. Introduction of seeding crystal is not necessary for the test.

*Rules for rounding off numerical values (revised).

†Specification for pyrethrum extracts (second revision).

‡Methods of tests for pesticides and their formulations.

2.2.4 Flash Point — When determined by the method prescribed in IS : 1448 (P : 20)-1960*, the flash point of the material shall be above 24·5°C.

2.2.5 Emulsion Stability — Any separation, including creaming at the top and sedimentation at the bottom of 100 ml of emulsion prepared in standard hard water with 5 ml of the concentrate for public health use and with 2 ml of concentrate for agricultural use, shall not exceed 2 ml when tested by the method prescribed in 13.3 of IS : 6940-1973†.

2.2.6 Heat Stability — After treating in accordance with the method prescribed in 13.4 of IS : 6940-1973†, the material shall comply with the requirements specified in 2.2.3 to 2.2.5 and 2.3.

2.3 Total Pyrethrin Content — When determined by the method prescribed in Appendix B of IS : 1051-1980‡, the observed total pyrethrin content, percent by mass of any of the samples shall not differ from the nominal total pyrethrin content percent by mass by more than the tolerance limits indicated below:

<i>Nominal Value, Percent</i>	<i>Tolerance, Percent</i>	
Up to 9	+ 10	} of the nominal value
	— 5	
Above 9 and below 50	± 5	
	+ 5	
50 and above	— 3	

2.3.1 The actual value of total pyrethrin content in the material shall be calculated to the second decimal place and then rounded off to the first decimal place before applying tolerances given in 2.3.

2.3.2 The average content of all samples shall not be less than the declared nominal content.

3. PACKING AND MARKING

3.1 Packing — The material shall be packed in accordance with the requirements given in IS : 8190 (Part II)-1980§.

3.2 Marking — The containers shall bear legibly and indelibly the following information and any other information as is necessary under the Insecticides Act and Rules:

*Methods of tests for petroleum and its products: P : 20 Flash point by Abel apparatus.

†Methods of tests for pesticides and their formulations.

‡Specification for pyrethrum extracts (*second revision*).

§Requirements for packing of pesticides: Part II Liquid pesticides (*first revision*).

- a) Name of the material and its end use;
- b) Name of the manufacturer;
- c) Date of manufacture;
- d) Batch number;
- e) Net volume of contents;
- f) Nominal total pyrethrin content, percent by (m/m); and
- g) The cautionary notice as worded in the Insecticides Act and Rules.

3.2.1 Each container may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

4. SAMPLING

4.1 Representative samples of the material shall be drawn as prescribed in ' Indian Standard Methods for sampling of pesticides and their formulations ' (*under preparation*).

NOTE — Till such time the standard under preparation is published, samples shall be drawn as agreed to between the concerned parties.

5. TESTS

5.1 Tests shall be carried out by the appropriate methods referred in **2.2.2** to **2.2.6** and **2.3**.

5.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see IS : 1070-1977**) shall be employed in tests.

NOTE — ' Pure chemicals ' shall mean chemicals that do not contain impurities which affect the result of analysis.

*Specification for water for general laboratory use (*second revision*).

(Continued from page 2)

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INDIAN STANDARDS

ON

PESTICIDES (EMULSIFIABLE CONCENTRATES)

IS:

632-1978	Gamma-BHC (Lindane) emulsifiable concentrates (<i>fourth revision</i>)
633-1975	DDT emulsifiable concentrates (<i>first revision</i>)
1307-1982	Aldrin emulsifiable concentrates (<i>second revision</i>)
2567-1978	Malathion emulsifiable concentrates (<i>second revision</i>)
2682-1966	Chlordane emulsifiable concentrates (<i>first revision</i>)
2861-1980	Diazinon emulsifiable concentrates (<i>first revision</i>)
2865-1978	Methyl parathion emulsifiable concentrates (<i>first revision</i>)
3903-1975	Dimethoate emulsifiable concentrates (<i>first revision</i>)
3905-1966	Thiometon emulsifiable concentrates
4323-1980	Endosulfan emulsifiable concentrates (<i>first revision</i>)
4325-1967	Binapacryl emulsifiable concentrates
5277-1978	Dichlorvos emulsifiable concentrates (<i>first revision</i>)
5279-1969	Dicofol emulsifiable concentrates
5281-1980	Fenitrothion emulsifiable concentrates (<i>first revision</i>)
6014-1978	Emulsifiable larvicidal oil, pyrethrum based (<i>first revision</i>)
6439-1978	Heptachlor emulsifiable concentrates (<i>first revision</i>)
7946-1976	Toxaphene emulsifiable concentrates
7948-1976	Fenthion emulsifiable concentrates
8026-1976	Formothion emulsifiable concentrates
8027-1976	Propanil emulsifiable concentrates
8028-1976	Quinalphos emulsifiable concentrates
8259-1976	Oxydemeton-methyl emulsifiable concentrates
8291-1976	Phenthoate emulsifiable concentrates
8487-1977	Phosalone emulsifiable concentrates
8498-1977	Temephos emulsifiable concentrates
8944-1978	Chlorpyrifos emulsifiable concentrates
8955-1978	Edifenphos emulsifiable concentrates
8957-1978	Nitrofen emulsifiable concentrates
8959-1978	Fluchloralin emulsifiable concentrates
9354-1980	Alachlor emulsifiable concentrates
9356-1980	Butachlor emulsifiable concentrates
9358-1980	Triallate emulsifiable concentrates
9656-1980	Tridemorph emulsifiable concentrates
9665-1981	Propoxur emulsifiable concentrates

AMENDMENT NO. 1 SEPTEMBER 1988
TO
IS : 4808-1982 SPECIFICATION FOR PYRETHRUM
EMULSIFIABLE CONCENTRATES

(First Revision)

(Page 5, clause 2.2.6) — Add the following note at the end of the clause:

NOTE — The material need not be subjected to heat treatment if it has crossed half of its shelf life as ascertained from the date of manufacture and date of expiry declared on the container.'

(AFCDC 6)

AMENDMENT NO. 2 MAY 1994
TO
IS 4808 : 1982 SPECIFICATION FOR PYRETHRUM
EMULSIFIABLE CONCENTRATES

(First Revision)

(Page 5, clause 2.2.6) — Delete.

(Page 6, clause 4.1) — Substitute the following for the existing:

‘When freshly manufactured material in bulk quantity is offered for inspection, representative samples of the material shall be drawn and tested as prescribed in IS 10627 : 1983 within 90 days of its manufacture. When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627 : 1983. However, the criteria for conformity of the material when tested, shall be the limits of tolerances, as applicable over the declared nominal value and given under clause 2.3 of the standard.’